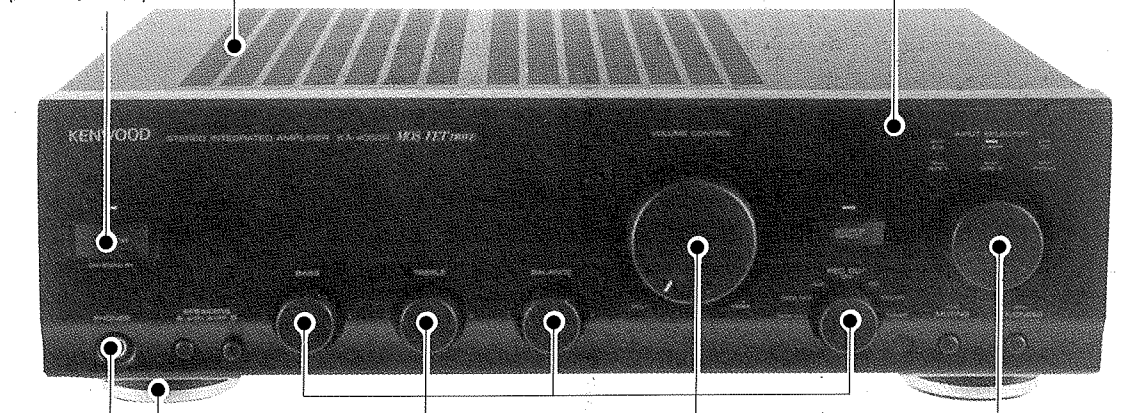
STEREO INTEGRATED AMPLIFIER

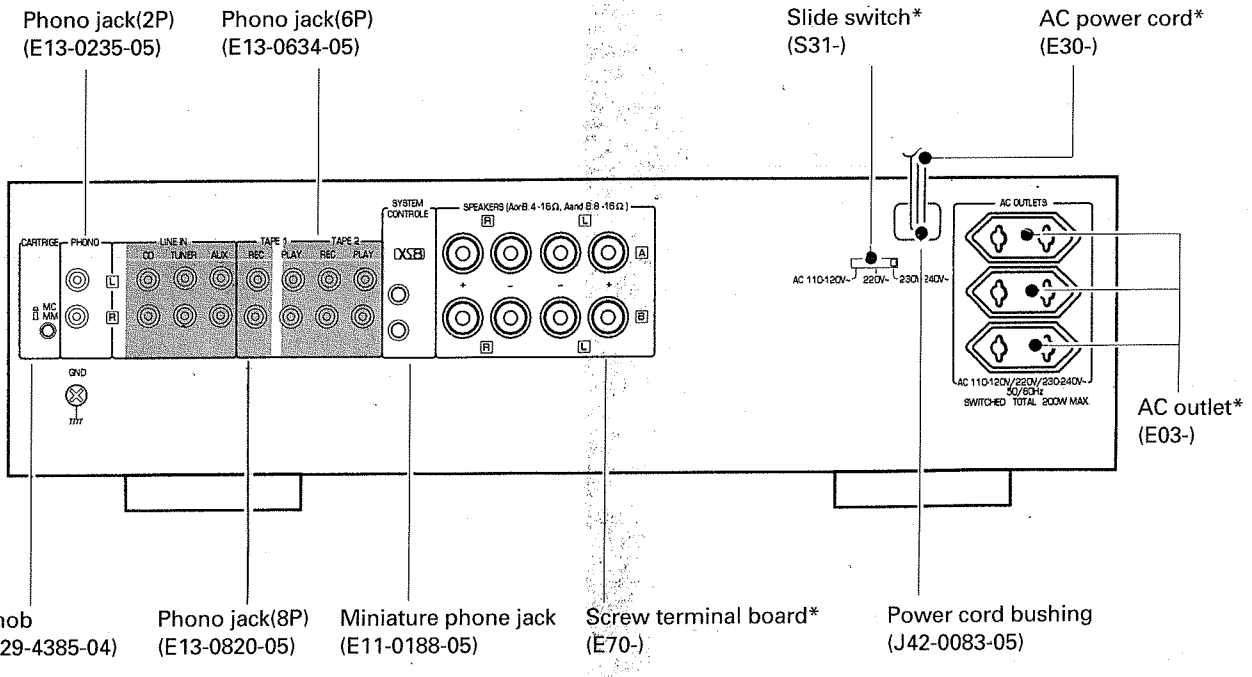
KA-4060R

SERVICE MANUAL

KENWOOD

© 1994-4 PRINTED IN JAPAN
B51-4881-00(K) 2411





***Refer to parts list on page 22**

Caution : Signal ground floats from chassis ground. Please connect the cold lead of tester or oscilloscope to the cold terminal of speaker or input jack if check and/or measure the voltage.(Don't connect ground of unit.)

CONTENTS

ACCESSORIES 2
REMOTE CONTROL 3
CIRCUIT DESCRIPTION 4
ADJUSTMENT 7
WIRING DIAGRAM 8
PC BOARD 9
SCHEMATIC DIAGRAM 13
EXPLODED VIEW 21
PARTS LIST 22
SPECIFICATIONS 25

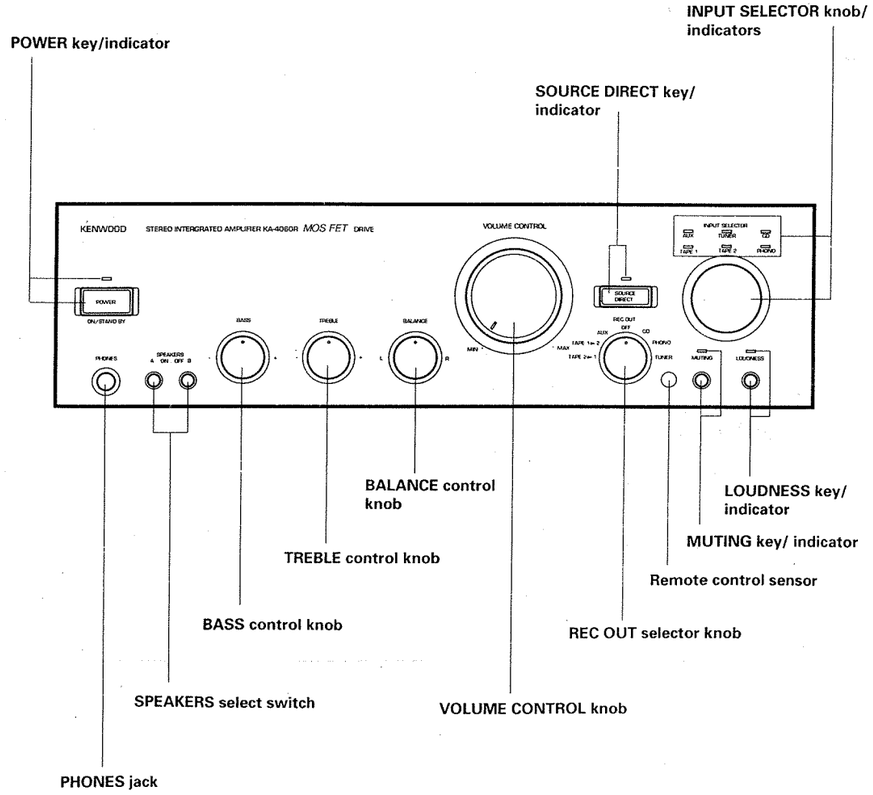
Accessories

- Remote control unit 1
  (A70-0979-05)

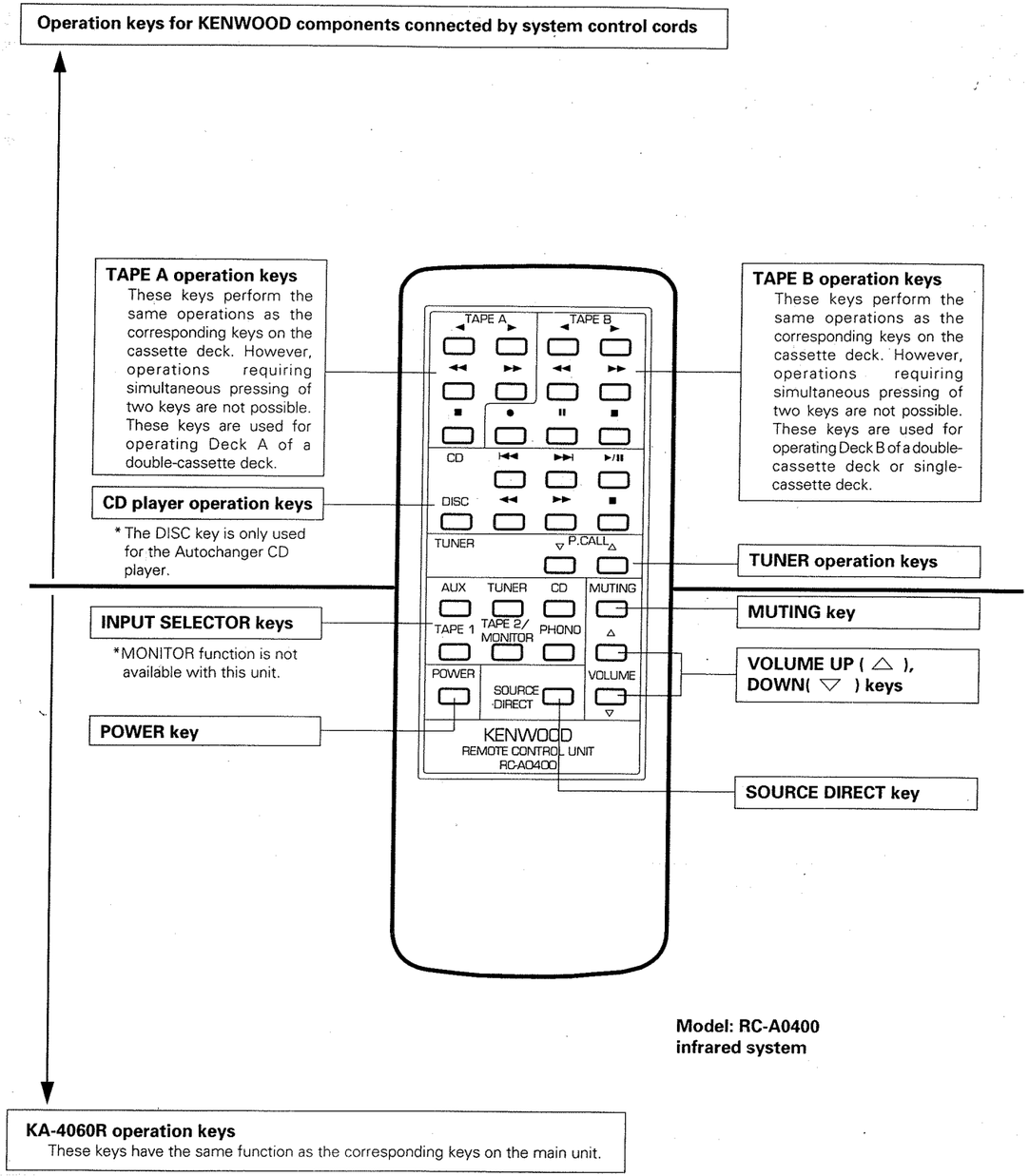
Battery cover:(A09-0159-08)

- Batteries(R03/UM-4/ "AAA") 2

- AC plug adaptor 1
  (Except for U.K., Australia and Europe)
  For the unit with a European AC plug in areas other than Europe.
  (E03-0115-05)



REMOTE CONTROL

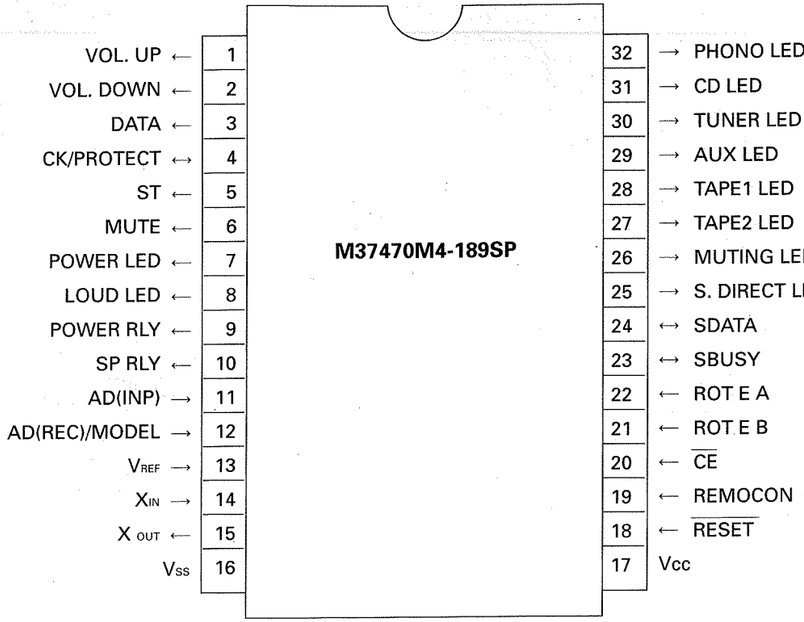

Operation keys for KENWOOD components connected by system control cords
TAPE A operation keys
These keys perform the same operations as the corresponding keys on the cassette deck. However, operations requiring simultaneous pressing of two keys are not possible. These keys are used for operating Deck A of a double-cassette deck.
CD player operation keys
* The DISC key is only used for the Autochanger CD player.
INPUT SELECTOR keys
*MONITOR function is not available with this unit.
POWER key
TAPE B operation keys
These keys perform the same operations as the corresponding keys on the cassette deck. However, operations requiring simultaneous pressing of two keys are not possible. These keys are used for operating Deck B of a double-cassette deck or single-cassette deck.
TUNER operation keys
MUTING key
VOLUME UP (△), DOWN(▽) keys
SOURCE DIRECT key
TAPE A
TAPE B
CD
DISC
TUNER
P.CALL
AUX
TUNER
CD
MUTING
TAPE 1
TAPE 2/ MONITOR
PHONO
POWER
SOURCE DIRECT
VOLUME
KENWOOD
REMOTE CONTROL UNIT
RC-A0400
KA-4060R operation keys
These keys have the same function as the corresponding keys on the main unit.

Model: RC-A0400
infrared system

CIRCUIT DESCRIPTION

Microprocessor M37470M4-189SP(X09:IC5)

Pin connection



KA-4060R

CIRCUIT DESCRIPTION

Pin function

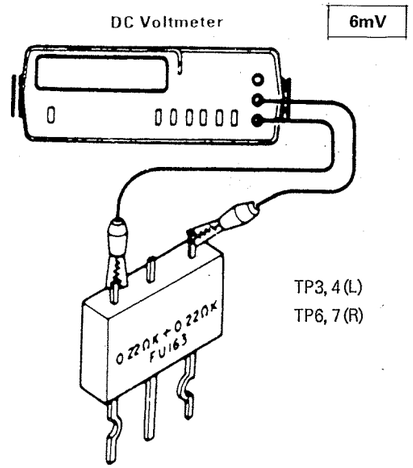
Pin NO.	Pin name	I/O	Name	Description
1	P17/Srdy	O	VOL.UP	Output of UP signal for control of electronic volume Electronic volume UP:HIGH Electronic volume except UP:LOW Back - up mode:LOW
2	P16/CLK	O	VOL.DOWN	Output of DOWN signal for control of electronic volume Electronic volume DOWN:HIGH Electronic volume except DOWN:LOW Back - up mode:LOW
3	P15/Sout	O	DATA	Output of DATA signal for control of selector IC(NJU7313, NJU7311)
4	P14/Sin	I/O	PROTECTION/CLK	Normally:input CLOCK output:output Protect ON:HIGH, Protect OFF:LOW Output of CLOCK signal for control of selector IC Back - up mode:input
5	P13/T1	O	ST	Output of ST signal for control of selector IC Normally:LOW Back - up mode:LOW
6	P12/T0	O	MAIN MUTE	Output of MUTE signal MUTE ON:HIGH, MUTE OFF:LOW Back - up mode:input
7	P11	O	POWER LED	Control of POWER LED LOW:ON, HIGH:OFF Back - up mode:input
8	P10	O	LOUDNESS LED	Control of LOUDNESS LED LOW:ON, HIGH:OFF Back - up mode:input
9	P23/IN3	O	POWER RELAY	Control of POWER RELAY POWER ON:HIGH, POWER OFF:LOW Back-up mode:LOW
10	P22/IN2	O	SPEAKER RELAY	Control of SPEAKER RELAY SPEAKER ON:HIGH, SPEAKER OFF:LOW Back - up mode:LOW
11	P21/IN1	I	INPUT SEL	Input of INPUT SEL analog signal Back - up mode:input
12	P20/IN0	I	REC SEL/ Model switching	Input of REC SEL analog signal Input of model switching analog signal More than 0.5V:KA - 4060R Less than 0.5V:KA 2060R/3060R Back - up mode:input
13	Vref	I	Vref	Standard voltage of A/D
14	Xin	I	Xin	Connection of crystal oscillator(8MHz)
15	Xout	0	Xout	Connection of crystal oscillator(8MHz)

CIRCUIT DESCRIPTION

16	Vss		Vss	GND
17	Vcc		Vcc	+5V
18	$\overline{\text{RESET}}$	I	$\overline{\text{RESET}}$	Reset
19	P30/INT0	I	REMOCON	Input of remote control signal
20	P31/INT1	I	$\overline{\text{CE}}$	Back - up detection
21	P32/CNTR	I	ROTARY E A	Input of rotary encoder A signal HIGH:clockwise Back - up mode:input
22	P33/CNTR1	I	ROTARY E B	Input of rotary encoder B signal LOW:counterclockwise Back -up mode:input
23	P40	I/O	S BUSY	System serial BUSY signal input/output Back - up mode:input
24	P41	I/O	S DATA	System serial DATA signal input/output Back - up mode:input
25	P00	O	S.DIRECT LED	Control of SOURCE DIRECT LED LOW:ON, HIGH:OFF Back - up mode:input
26	P01	O	MUTING LED	Control of MUTING LED LOW:ON, HIGH:OFF Back - up mode:input
27	P02	O	TAPE 2 LED	Control of TAPE 2 LED LOW:ON, HIGH:OFF Back - up mode:input
28	P03	O	TAPE 1 LED	Control of TAPE 1 LED LOW:ON, HIGH:OFF Back - up mode:input
29	P04	O	AUX LED	Control of AUX LED LOW:ON, HIGH:OFF Back - up mode:input
30	P05	O	TUNER LED	Control of TUNER LED LOW:ON, HIGH:OFF Back - up mode:input
31	P06	O	CD LED	Control of CD LED LOW:ON, HIGH:OFF Back - up mode:input
32	P07	O	PHONO LED	Control of PHONO LED LOW:ON, HIGH:OFF Back - up mode:input

ADJUSTMEMT

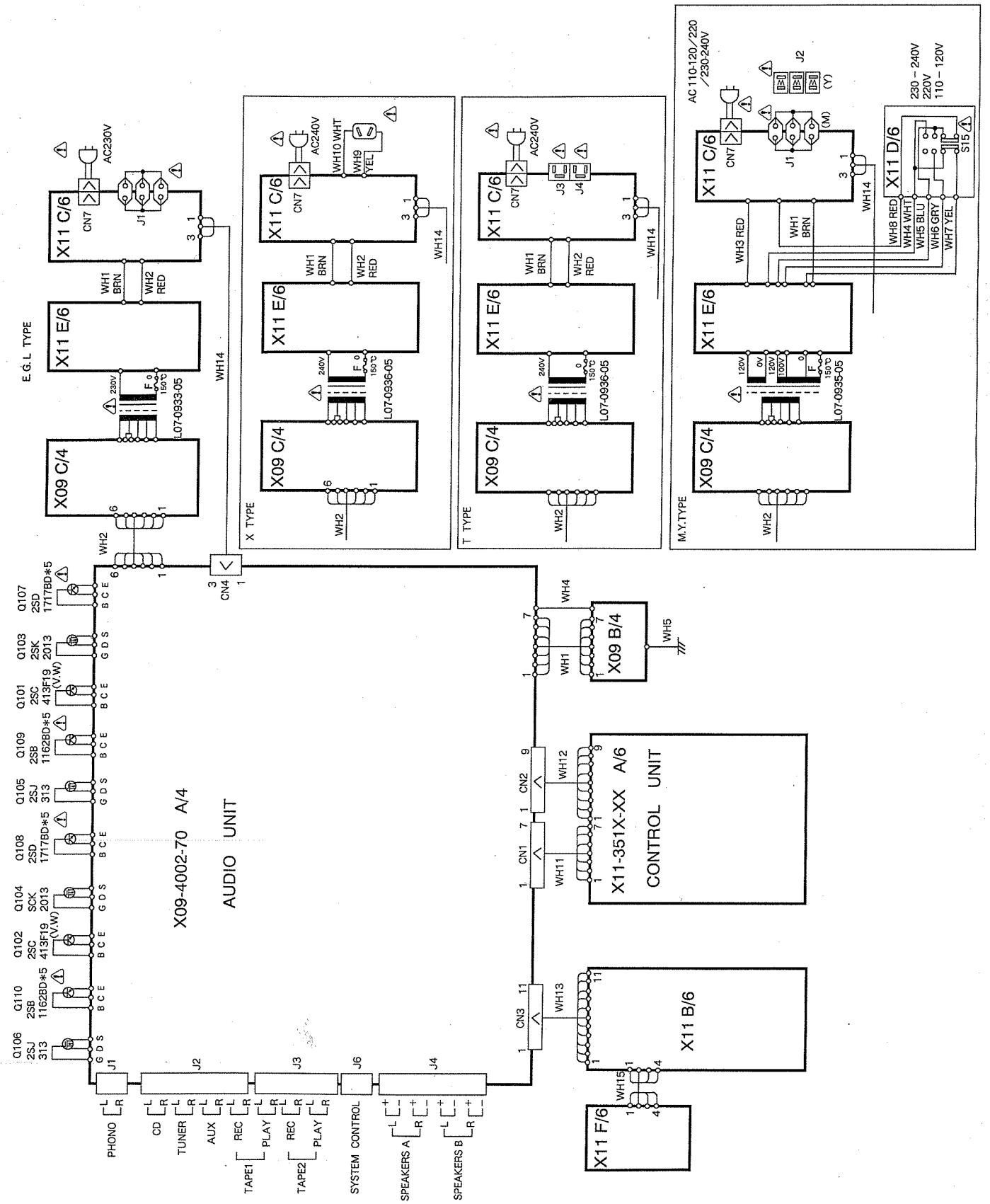
No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	AMPLIFIER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
Unless otherwise specified, set the respective switches as follows : POWER : ON SPEAKER : B REC OUT : OFF SELECTOR : PHONO							
1	IDLE CURRENT	–	Connect a DC voltmeter across TP 3,4 TP 6,7	VOLUME : 0	VR 3,5(L) VR 4,6(R)	6mV (30mA)	(a)



Caution : Signal ground floats from chassis ground. Please connect the cold lead of tester or oscilloscope to the cold terminal of speaker or input jack if check and/or measure the voltage.(Don't connect ground of unit.)

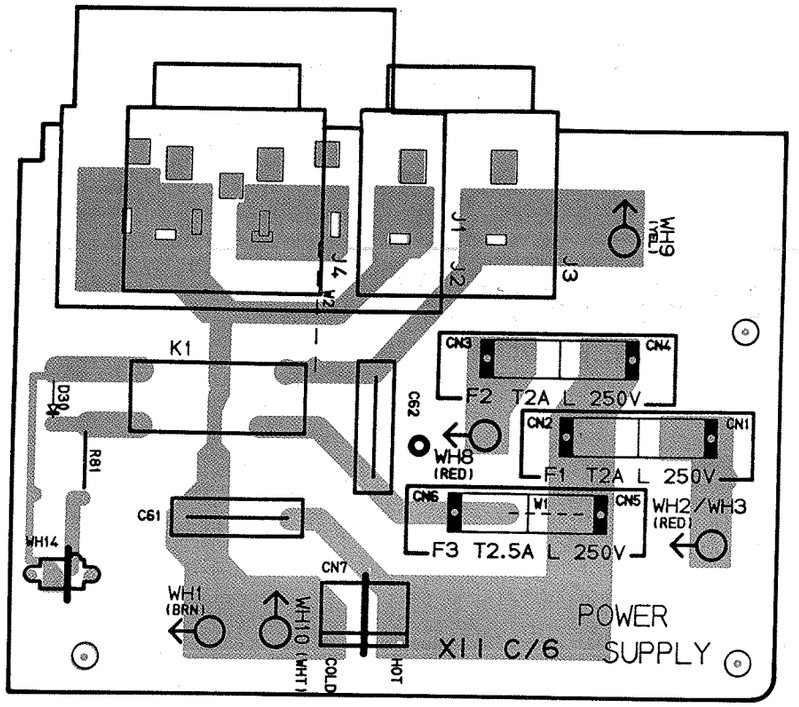
KA-4060R

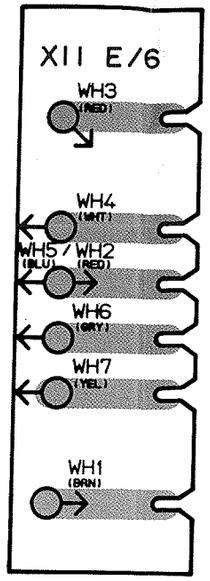
WIRING DIAGRAM

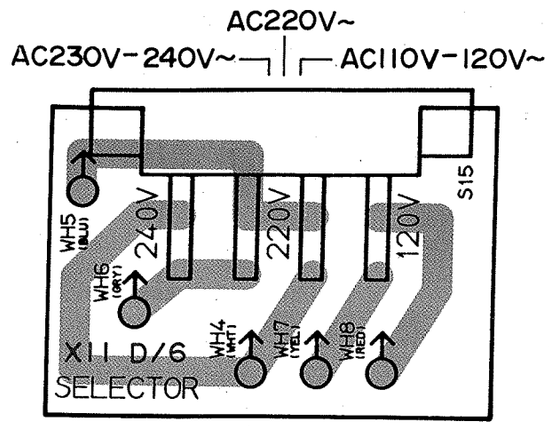


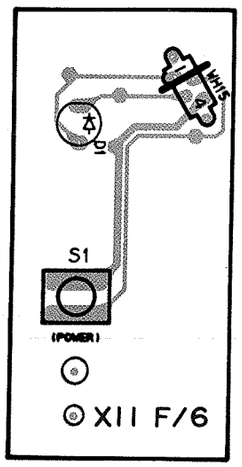
PC BOARD(Component side view)

CONTROL UNIT(X11-351X-XX)

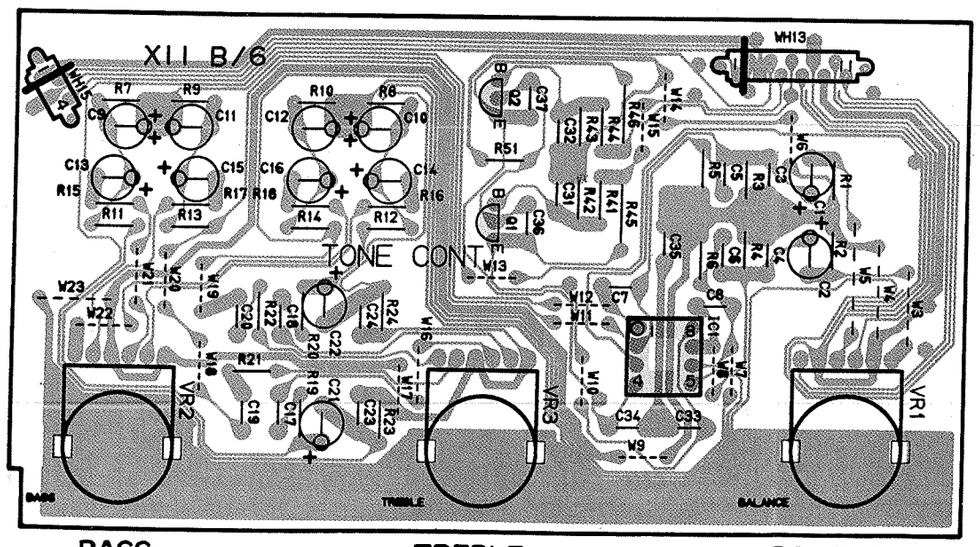




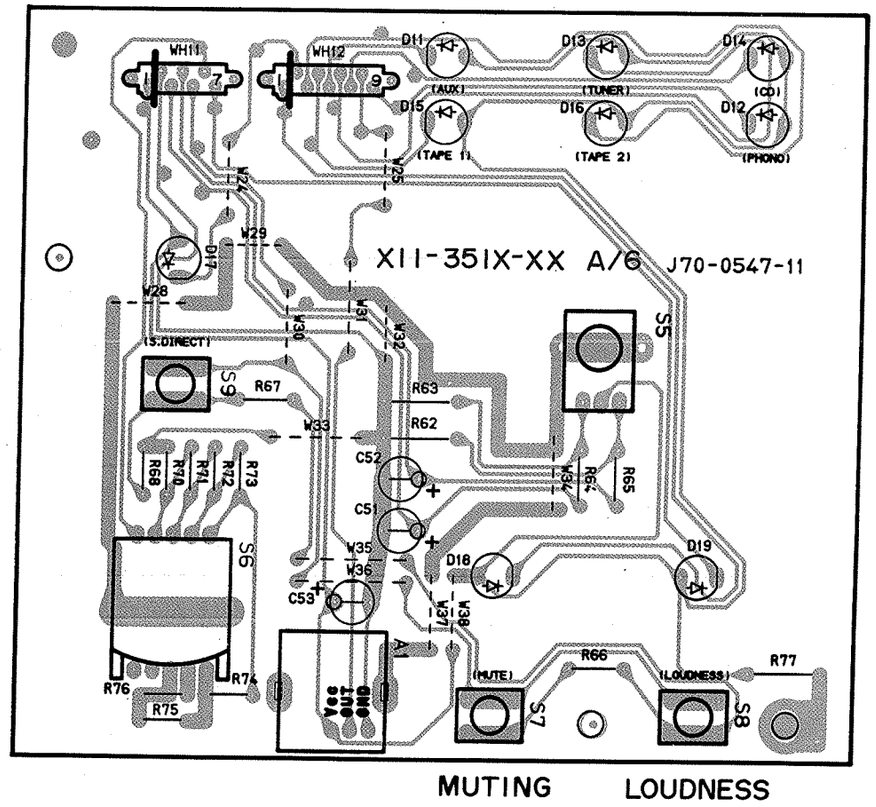




POWER



BASS TREBLE BALANCE

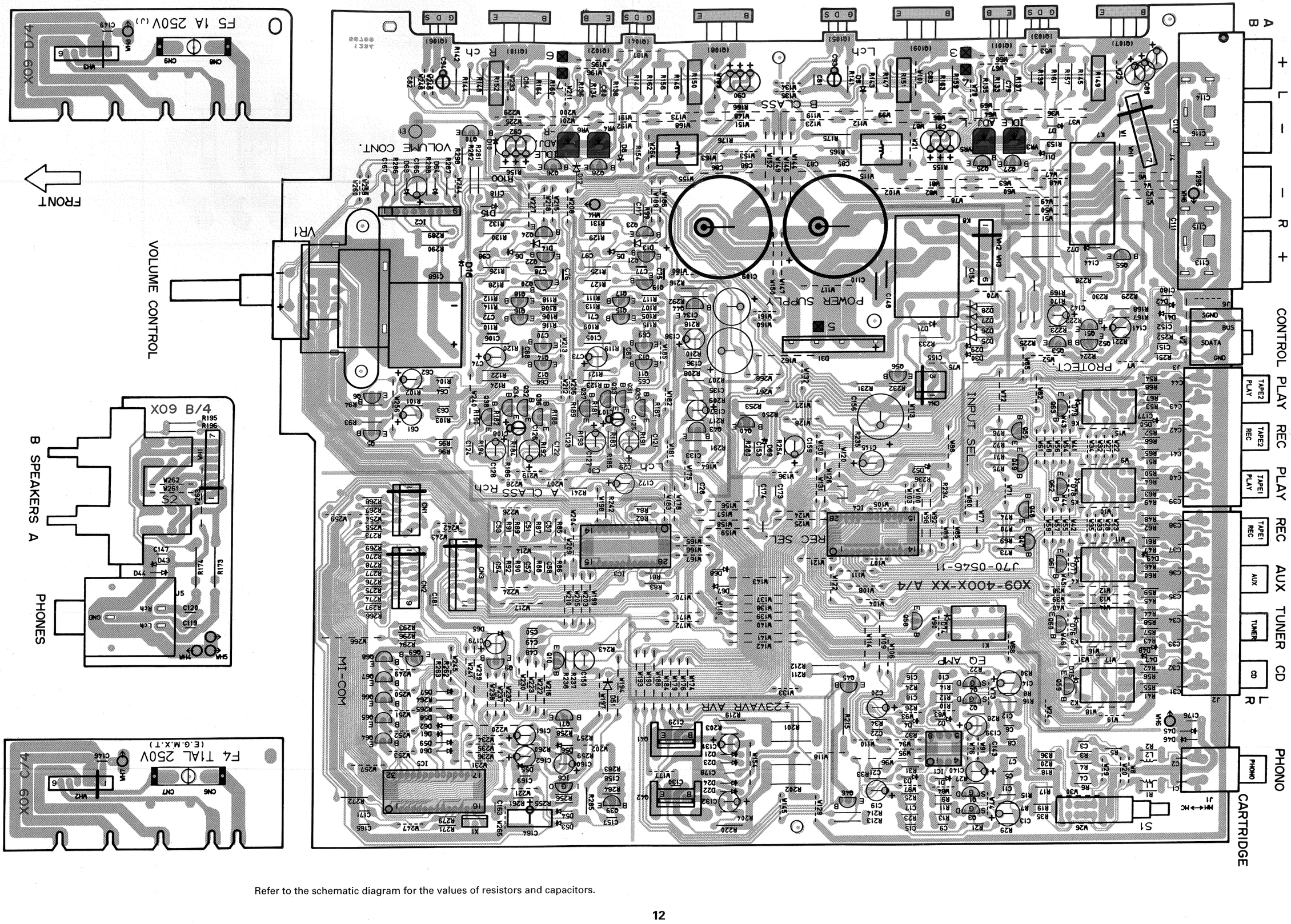


MUTING LOUDNESS

Refer to the schematic diagram for the values of resistors and capacitors.

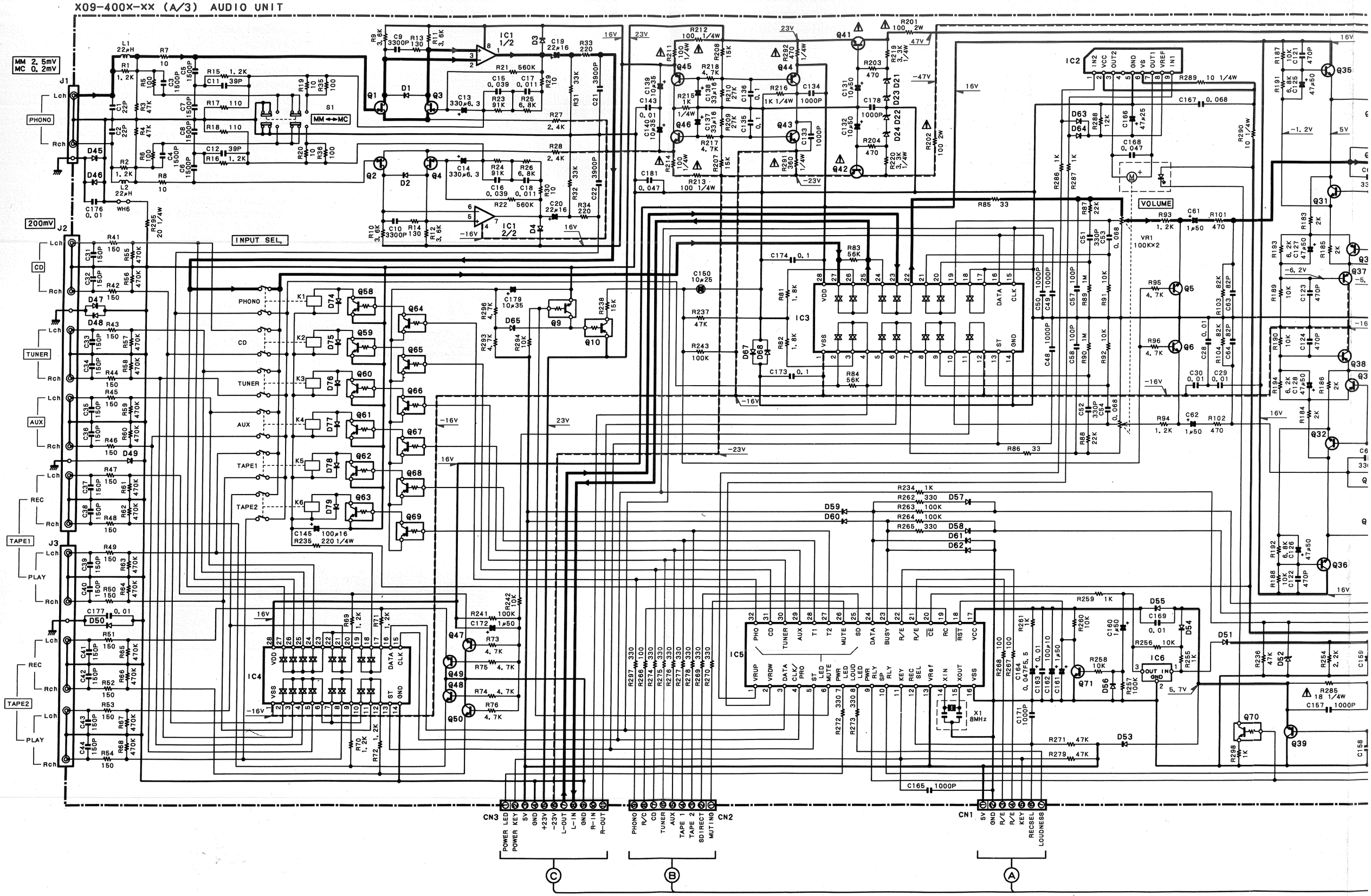
PC BOARD(Component side view)

AUDIO UNIT(X09-400X-XX)



Refer to the schematic diagram for the values of resistors and capacitors.

X09-400X-XX (A/3) AUDIO UNIT

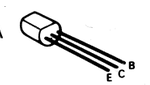


Signal ground floats from chassis ground. please connect the cold lead of tester or oscilloscope to the cold terminal of speaker or input jack if check and / or measure the voltage. (Don't connect ground of unit.)

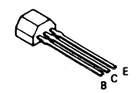
- DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

CAUTION : For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

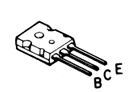
2SA1124	2SB764	2SC2878
2SA1534A	2SC1845	2SC3940A
2SA954	2SC2003	2SD1302
2SA992	2SC2632	2SD863



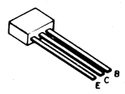
DTA143TS	2SC2458
DTC143TS	
UN4116	
2SA1048	

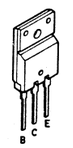


2SB1162BD＊5	2SB1370
2SD1717BD＊5	2SD2061

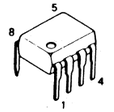


UN4216	2SB1375
2SA1309A	2SD2012
2SC3311A	

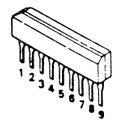




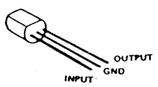
NJM4565D	
NJM4565D-D	



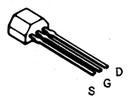
TA8409S



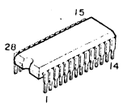
PST529D



2SK371



TC9162N
TC9164N



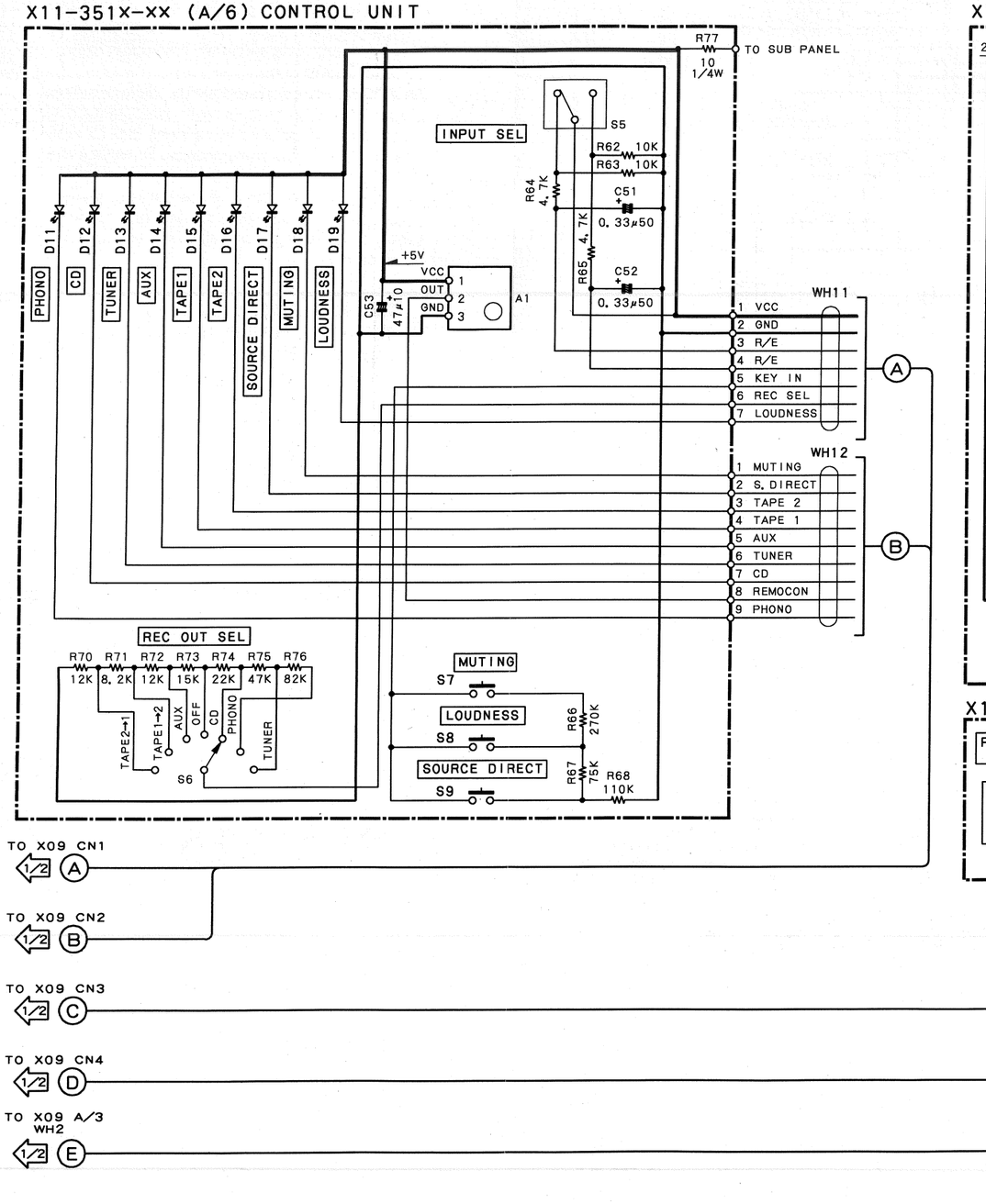
IC1	:NJM4565D
IC2	:TA8409S
IC3	:TC9162N
IC4	:TC9164N
IC5	:M37470M4-189SP
IC6	:PST529D
Q1~4	:2SK371(BL) or 2SK371(V)
Q5, 6	:2SD1302(S, T)
Q9, 31, 32, 58~63, 70	:UN4216 or DTC143TS
Q10, 33, 34, 64~69	:UN4116 or DTA143TS
Q11~18, 27, 28, 51, 52	:2SC1845(F, E)
Q19~22	:2SA1124(R, S)
Q23, 24	:2SC2632(R, S)
Q25, 26, 53	:2SA992(F, E)
Q35, 36, 71	:2SC2458(Y, GR) or 2SC3311A(Q, R)
Q37~39	:2SA1048(Y, GR) or 2SA1309A(Q, R)
Q40, 46	:2SC3940A(R, S) or 2SD863(E, F)
Q41	:2SD2061(E, F) or 2SD2012
Q42	:2SB1370(E, F) or 2SB1375
Q43, 55, 56	:2SC2003(L, K)
Q44	:2SA954(L, K)
Q45	:2SA1534A(R, S) or 2SB764(E, F)
Q47~50	:2SC2878(B)
Q101, 102	:2SC4137F19(V, W)
Q103, 104	:2SK2013
Q105, 106	:2SJ313
Q107, 108	:2SD1717BD＊5
Q109, 110	:2SB1162BD＊5
D1~16, 29, 30, 41~51, 53~65, 67, 68, 71, 72, 74~79	:HSS104A or 1SS131
D21, 22	:RD15JS(B) or HZS15S(B)
D23, 24	:RD8, 2JS(B2) or HZS8, 2S(B2)
D25~28	:S5688B or 1SR139-100
D31	:D5SBA20F03 or RBV-602LFA
D52	:RD5, 1JS(B2) or HZS5, 1S(B2)
D69	:RD7, 5JS(B2) or HZS7, 5S(B2)

UNIT	Ref. NO / ABB	J4
2-70	E, G, Y, M, X, T	E70-0018-05
2-71	L	E70-0019-05

SIGNAL LINE
GND LINE
+B LINE
−B LINE

KA-4060R
KENWOOD

X11-351X-XX (A/6) CONTROL UNIT



TO X09 CN1 1/2 (A)

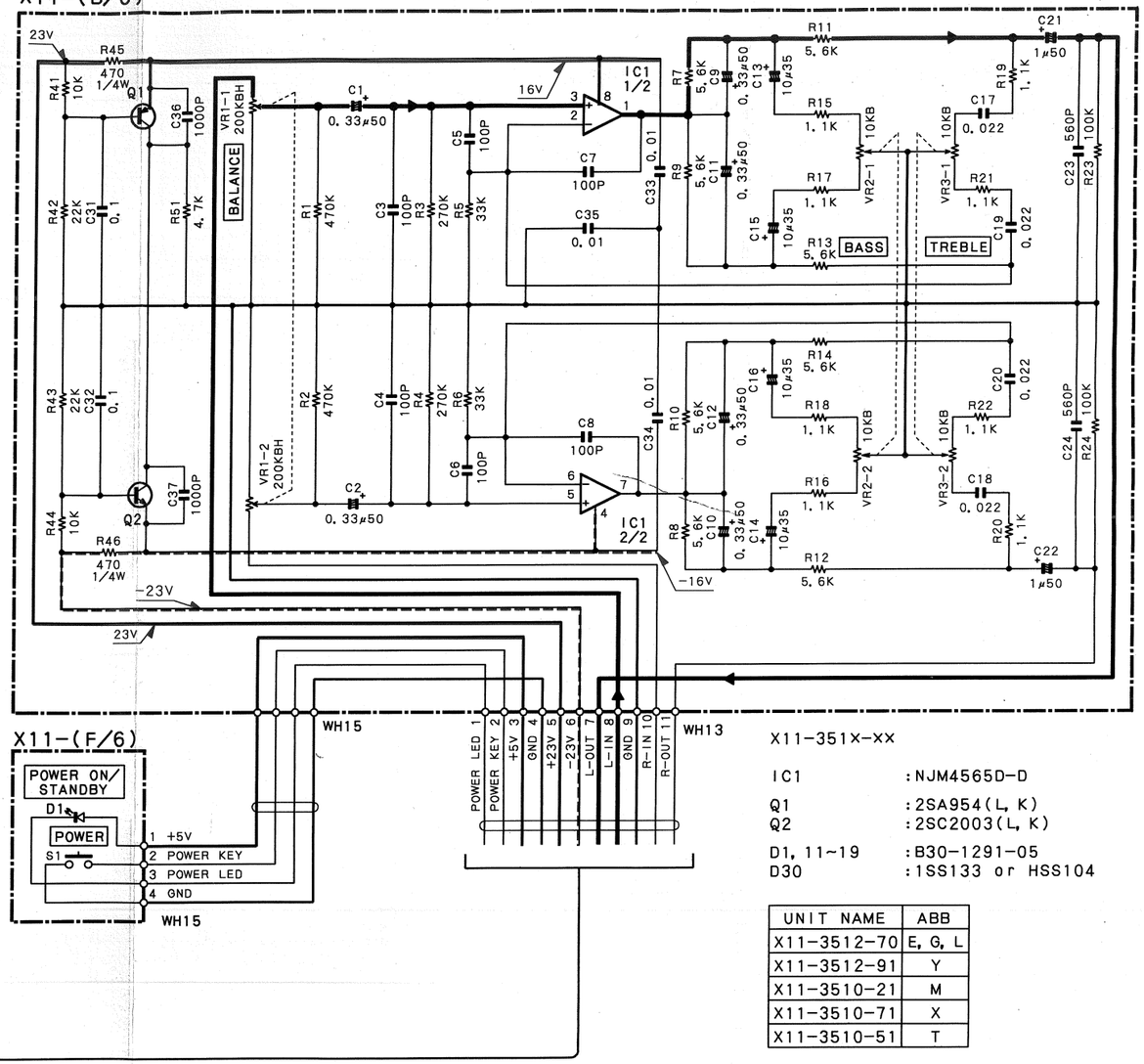
TO X09 CN2 1/2 (B)

TO X09 CN3 1/2 (C)

TO X09 CN4 1/2 (D)

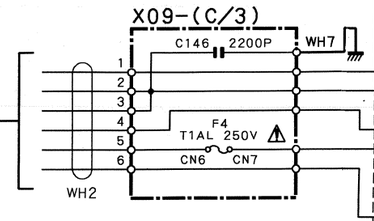
TO X09 A/3 WH2 1/2 (E)

X11-(B/6)

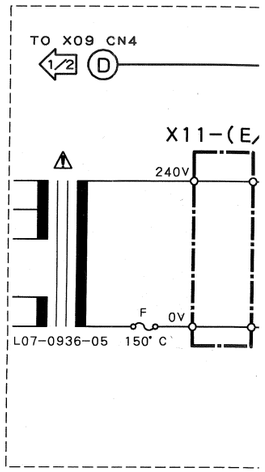


X11-(F/6)

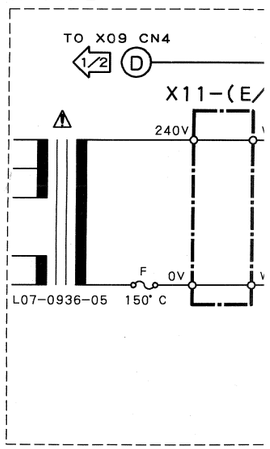
X09-(C/3)



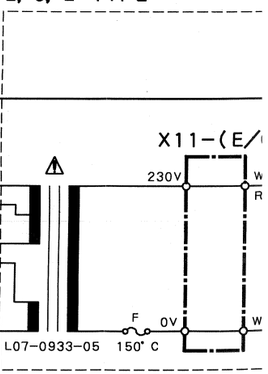
T TYPE



X TYPE



E, G, L TYPE

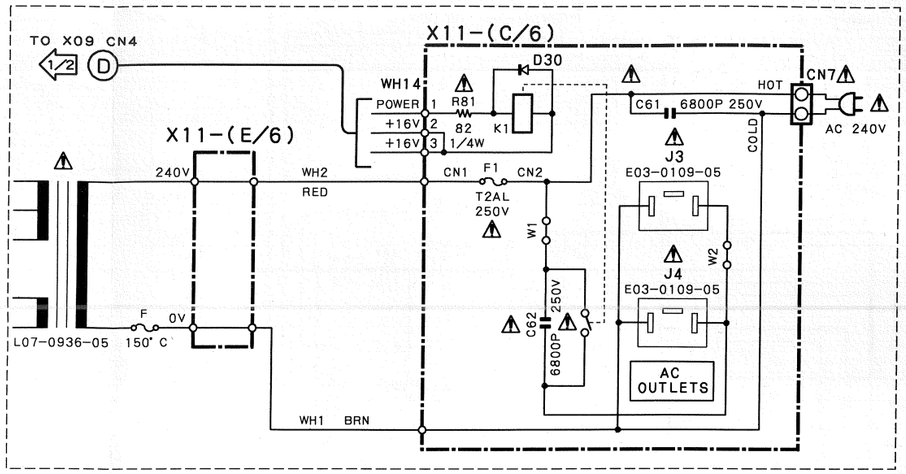


X11-351X-XX

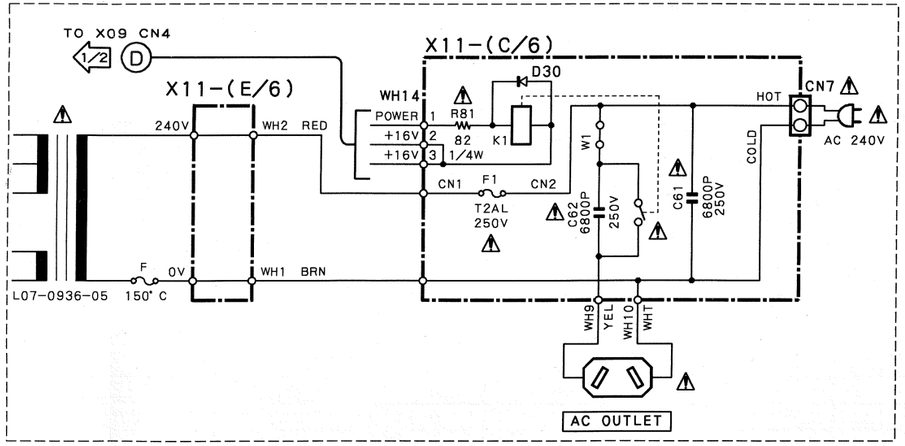
IC1	:NJM4565D-D
Q1	:2SA954(L, K)
Q2	:2SC2003(L, K)
D1, 11~19	:B30-1291-05
D30	:1SS133 or HSS104

UNIT NAME	ABB
X11-3512-70	E, G, L
X11-3512-91	Y
X11-3510-21	M
X11-3510-71	X
X11-3510-51	T

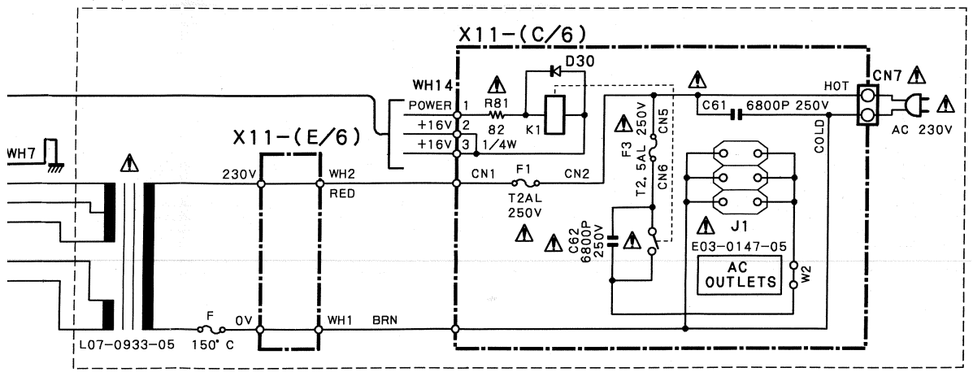
T TYPE



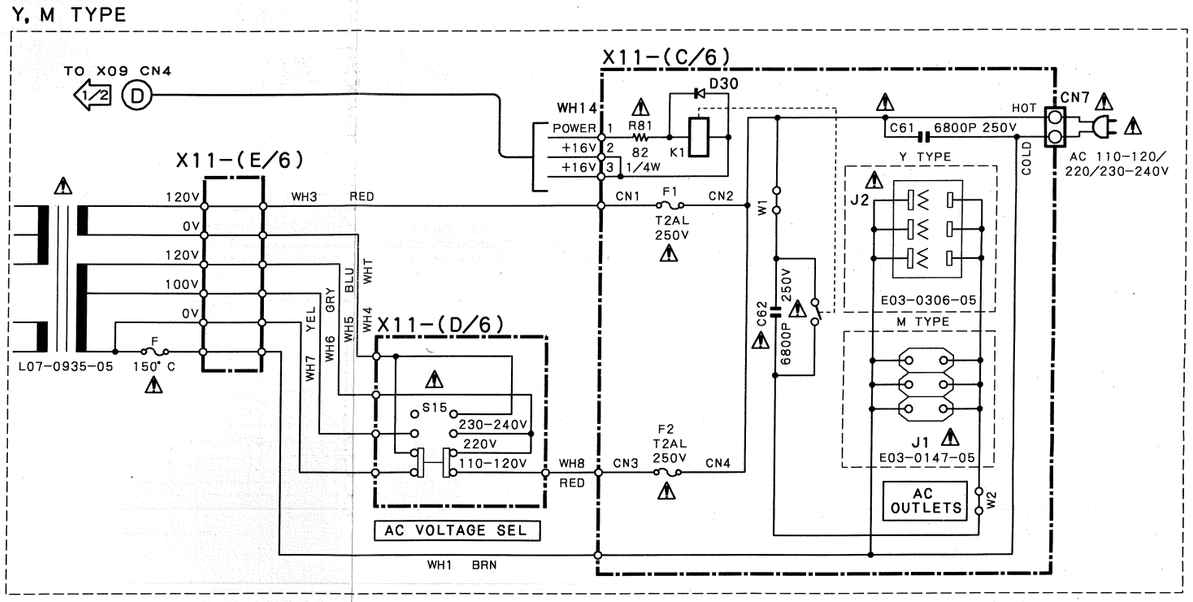
X TYPE



E, G, L TYPE



Y, M TYPE



Signal ground floats from chassis ground. please connect the cold lead of tester or oscilloscope to the cold terminal of speaker or input jack if check and / or measure the voltage. (Don' t connect ground of unit.)

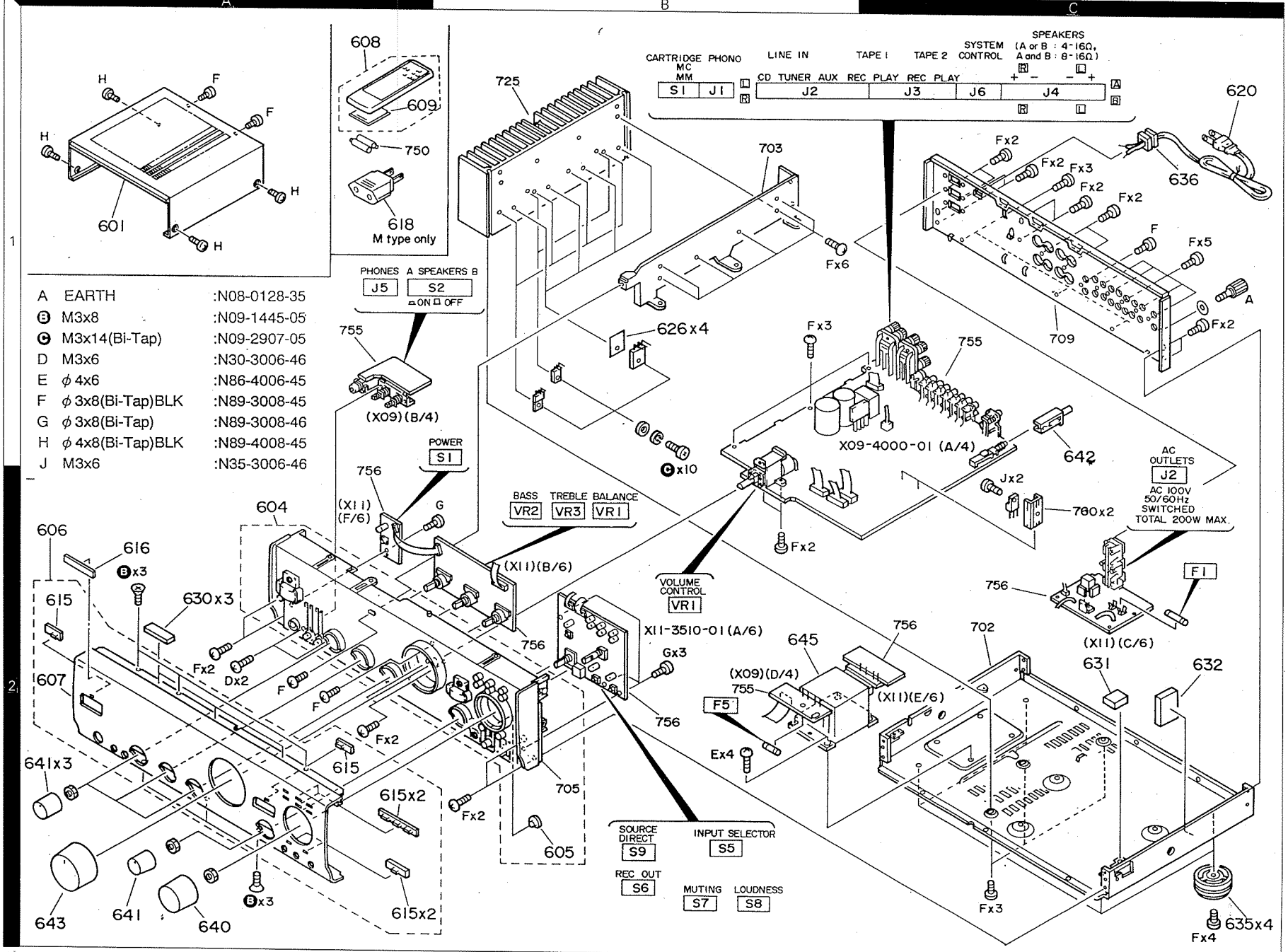
- DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

CAUTION : For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

SIGNAL LINE
GND LINE
+B LINE
-B LINE

Y08-5042-70

KA-4060R
KENWOOD



A	EARTH	:N08-0128-35
B	M3x8	:N09-1445-05
C	M3x14(Bi-Tap)	:N09-2907-05
D	M3x6	:N30-3006-46
E	ϕ 4x6	:N86-4006-45
F	ϕ 3x8(Bi-Tap)BLK	:N89-3008-45
G	ϕ 3x8(Bi-Tap)	:N89-3008-46
H	ϕ 4x8(Bi-Tap)BLK	:N89-4008-45
J	M3x6	:N35-3006-46

Parts with the exploded numbers larger than 700 are not supplied

＊ New Parts
Parts without Parts No. are not supplied.
Les articles non mentionnes dans le Parts No. ne sont pas fournis.
Teile ohne Parts No. werden nicht geliefert.

❶

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
			KA-4060R			
601	1A	＊	A01-3124-02	METALLIC CABINET		
604	2A	＊	A22-1672-12	SUB PANEL ASSY		
606	2A	＊	A60-0561-02	PANEL ASSY		
607	2A	＊	A60-0562-02	PANEL		
608	1A	＊	A70-0979-05	REMOTE CONTROLLER ASSY		
609	1A	＊	A09-0159-08	BATTERY COVER		
605	2B		B11-0237-14	COLOR FILTER		
615	2A	＊	B12-0240-04	INDICATOR		
616	2A		B43-0287-04	KENWOOD BADGE		
-			B46-0094-03	WARRANTY CARD	Y	
-			B46-0095-03	WARRANTY CARD	Y	
-		＊	B46-0096-43	WARRANTY CARD	X	
-			B46-0310-03	WARRANTY CARD	EGLT	
-			B58-0513-04	CAUTION CARD (PRESET220-240)	Y	
-		＊	B58-0964-03	CAUTION CARD (UL)	Y	
-		＊	B58-0965-03	CAUTION CARD (PTX TYPE PL)	XT	
-		＊	B58-0966-03	CAUTION CARD (ELM TYPE PL)	ELM	
-		＊	B58-0970-03	CAUTION CARD (R TYPE PL)	G	
-		＊	B60-1562-00	INSTRUCTION MANUAL (EN)	ELYMXT	
-		＊	B60-1563-00	INSTRUCTION MANUAL (FR)	EL	
-		＊	B60-1564-00	INSTRUCTION MANUAL (D/I)	EL	
-		＊	B60-1565-00	INSTRUCTION MANUAL (SP)	EL	
-		＊	B60-1566-00	INSTRUCTION MANUAL (C)	M	
-		＊	B60-1676-00	INSTRUCTION MANUAL (G)	EGL	
⚠ 618	1A		E03-0115-05	AC PLUG ADAPTER	M	
⚠ 620	1C		E30-2592-15	AC POWER CORD	EGLM	
⚠ 620	1C		E30-2717-05	AC POWER CORD	X	
⚠ 620	1C		E30-2721-05	AC POWER CORD	T	
⚠ 620	1C		E30-2739-05	AC POWER CORD	Y	
⚠ J2	2C		E03-0141-05	AC OUTLET	X	
626	1B		F20-1322-05	INSULATING BOARD		
-		＊	F20-1402-04	INSULATING BOARD		
630	2A	＊	G10-0412-04	NON-WOVEN FABRIC		
631	2C	＊	G11-0132-04	SOFT TAPE (15X10X8)		
632	2C	＊	G11-2203-04	CUSHION		
-		＊	G11-2204-04	CUSHION		
		＊	H50-1015-04	ITEM CARTON CASE	EGLYMX	
		＊	H50-1016-04	ITEM CARTON CASE	T	
-		＊	H10-5742-02	POLYSTYRENE FOAMED FIXTURE (L)		
-		＊	H10-5743-02	POLYSTYRENE FOAMED FIXTURE (R)		
-		＊	H12-2194-04	PACKING FIXTURE	T	
-		＊	H13-0155-04	CARTON BOARD	X	
-			H25-0225-04	PROTECTION BAG (850X450X0.03)	EGLYMX	
-			H25-0232-04	PROTECTION BAG (235X350X0.03)	EGLYMX	
-			H25-0651-04	PROTECTION BAG (0232 PRINTED)	T	
-			H25-0654-04	PROTECTION BAG (0225 PRINTED)	T	
635	2C		J02-1002-05	FOOT		
⚠ 636	1C		J42-0083-05	POWER CORD BUSHING		
-			J61-0307-05	WIRE BAND		
640	2A		K29-4215-04	KNOB (INPUT SELECTOR)		

L:Scandinavia K:USA P:Canada R:MEXICO
Y:PX(Far East, Hawaii) T:England E:Europe G:GERMANY
Y:AAFES(Europe) X:Australia M:Other Areas

⚠ indicates safety critical components.

＊ New Parts
Parts without Parts No. are not supplied.
Les articles non mentionnes dans le Parts No. ne sont pas fournis.
Teile ohne Parts No. werden nicht geliefert.

❷

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格			Destination 仕向	Remarks 備考
641	2A		K29-4384-04	KNOB (BAS/TRBLE/BALANCE/R.OUT)				
642	1C		K29-4385-04	KNOB (MM/MC)				
643	2A	＊	K29-5913-13	KNOB ASSY (VOLUME CONTROL)				
⚠ 645	2B	＊	L07-0933-05	POWER TRANSFORMER			BGL	
⚠ 645	2B	＊	L07-0935-05	POWER TRANSFORMER			YM	
⚠ 645	2B	＊	L07-0936-05	POWER TRANSFORMER			XT	
A	1C		N08-0128-35	BINDING POST (EARTH)				
B	2A		N09-1445-05	FLAT HEAD SET SCREW M3X8				
C	1B		N09-2907-05	TAPTITE WITH WASHER M3X14				
D	2A		N30-3006-46	PAN HEAD MACHINE SCREW M3X6				
E	2B		N86-4006-45	BINDING HD TAPTITE SCREW M4X6				
F	1C,2A		N89-3008-45	BINDING HEAD TAPTITE SCREW				
G	2A,2B		N89-3008-46	BINDING HEAD TAPTITE SCREW				
H	1A		N89-4008-45	BINDING HEAD TAPTITE SCREW				
			AUDIO UNIT(X09-400X-XX)					
C1 ,2			CC45FSL1H220J	CERAMIC	22PF	J		
C3 -8			CK45FB1H152K	CERAMIC	1500PF	K		
C9 ,10		＊	CQ92FM1H332JBL	MYLAR	3300PF	J		
C11 ,12			CC45FSL1H390J	CERAMIC	39PF	J		
C13 ,14			CE04KW0J331M	ELECTRO	330UF	6.3WV		
C15 ,16		＊	CQ92FM1H393JBL	MYLAR	0.039UF	J		
C17 ,18		＊	CQ92FM1H113JBL	MYLAR	0.011UF	J		
C19 ,20			CE04KW1C220M	ELECTRO	22UF	16WV		
C21 ,22		＊	CQ92FM1H392JBL	MYLAR	3900PF	J		
C28 -30			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C31 -44			CC45FSL1H151J	CERAMIC	150PF	J		
C48 -50			CK45FB1H102K	CERAMIC	1000PF	K		
C51 ,52			CC45FSL1H331J	CERAMIC	330PF	J		
C53 ,54		＊	CQ92FM1H683JBL	MYLAR	0.068UF	J		
C57 ,58			CC45FSL1H101J	CERAMIC	100PF	J		
C61 ,62			CE04KW1H010M	ELECTRO	1.0UF	50WV		
C63 ,64			CC45FSL1H820J	CERAMIC	82PF	J		
C65 ,66			CC45FSL1H331J	CERAMIC	330PF	J		
C67 ,68			C91-1470-05	FILM	47PF	K		
C69 ,70			CK45FB1H471K	CERAMIC	470PF	K		
C71 ,72		＊	CQ92FM1H122JBL	MYLAR	1200PF	J		
C73 ,74			CE04KW1A101M	ELECTRO	100UF	10WV		
C75 ,76		＊	CC45FSL2H080D	CERAMIC	8.0PF	D		
C77 ,78			CC45FSL2H680J	CERAMIC	68PF	J		
C79 ,80			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C83 ,84			CK45FB1H102K	CERAMIC	1000PF	K		
C85 -88			CF92FV1H104J	MF	0.10UF	J		
C89 -92			CE04KW2A010M	ELECTRO	1.0UF	100WV		
C93 ,94		＊	C90-3568-05	ELECTRO	1UF	50WV		
C97 ,98		＊	CQ92FM1H103JBL	MYLAR	0.010UF	J		
C105,106		＊	C91-1459-05	FILM	7PF	K		
C109,110		＊	C90-3546-05	ELECTRO	8200UF	56WV		
C111-114			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C115,116			CK45FB1H102K	CERAMIC	1000PF	K		
C117			CF92FV1H103J	MF	0.010UF	J		
C118		＊	CQ92FM1H103JBL	MYLAR	0.010UF	J		
C119,120		＊	CQ92FM1H102JBL	MYLAR	1000PF	J		
C121-124			CK45FB1H471K	CERAMIC	470PF	K		
C125-128			CE04KW1H470M	ELECTRO	47UF	50WV		

L:Scandinavia K:USA P:Canada R:MEXICO
Y:PX(Far East, Hawaii) T:England E:Europe G:GERMANY
Y:AAFES(Europe) X:Australia M:Other Areas

⚠ indicates safety critical components.

＊ New Parts
Parts without Parts No. are not supplied.
Les articles non mentionnes dans le Parts No. ne sont pas fournis.
Teile ohne Parts No. werden nicht geliefert.

❸

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格			Destination 仕向	Remarks 備考
C131,132			CE04KW1H100M	ELECTRO	10UF	50WV		
C133,134			CF92FV1H102J	MF	1000PF	J		
C135,136			CF92FV1H104J	MF	0.10UF	J		
C137,138			CE04KW1C330M	ELECTRO	33UF	16WV		
C139,140			CE04KW1V100M	ELECTRO	10UF	35WV		
C141			CE04KW1A101M	ELECTRO	100UF	10WV		
C142			CE04KW1H010M	ELECTRO	1.0UF	50WV		
C143			CF92FV1H103J	MF	0.010UF	J		
C144			CK45FB1H391K	CERAMIC	390PF	K		
C145			CE04KW1C101M	ELECTRO	100UF	16WV		
C146		＊	CQ92FM1H222JBL	MYLAR	2200PF	J		
C147			CK45FB1H102K	CERAMIC	1000PF	K		
C148			CK45FE2H103P	CERAMIC	0.010UF	P		
C150			CE04HW1E100M	NP-ELEC	10UF	25WV		
C151,152			CC45FSL1H221J	CERAMIC	220PF	J		
C153		＊	CQ92FM1H104JBL	MYLAR	0.10UF	J		
C154,155			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C156			CE04KW1E102M	ELECTRO	1000UF	25WV		
C157			CF92FV1H102J	MF	1000PF	J		
C158			CF92FV1H104J	MF	0.10UF	J		
C159			CE04KW1H2R2M	ELECTRO	2.2UF	50WV		
C160,161			CE04KW1H010M	ELECTRO	1.0UF	50WV		
C162			CE04KW1A101M	ELECTRO	100UF	10WV		
C163		＊	CQ92FM1H103JBL	MYLAR	0.010UF	J		
C164			C90-1826-05	BACKUP	0.047F	5.5WV		
C165			CK45FB1H102K	CERAMIC	1000PF	K		
C166			CE04KW1E470M	ELECTRO	47UF	25WV		
C167		＊	CQ92FM1H683JBL	MYLAR	0.068UF	J		
C168			CK45FF1H473Z	CERAMIC	0.047UF	Z		
C169		＊	CQ92FM1H103JBL	MYLAR	0.010UF	J		
C171			CK45FB1H102K	CERAMIC	1000PF	K		
C172			CE04KW1H010M	ELECTRO	1.0UF	50WV		
C173,174		＊	CQ92FM1H104JBL	MYLAR	0.10UF	J		
C176			CF92FV1H103J	MF	0.010UF	J		
C177		＊	CQ92FM1H103JBL	MYLAR	0.010UF	J		
C178			CK45FB1H102K	CERAMIC	1000PF	K		
C179			CE04KW1V100M	ELECTRO	10UF	35WV		
C180		＊	CQ92FM1H103JBL	MYLAR	0.010UF	J		
C181			CK45FF1H473Z	CERAMIC	0.047UF	Z		
J1			E13-0235-05	PHONO JACK(2P) PHONO				
J2			E13-0820-05	PHONO JACK(8P) CD/TUN/AUX/T1 R				
J3			E13-0634-05	PHONO JACK(6P) T1 PLAY/TAPE 2				
J4			E70-0018-05	SCREW TERMINAL BOARD SPEAKERS			EGYMXT	
J4			E70-0019-05	SCREW TERMINAL BOARD SPEAKERS			L	
J5			E11-0208-05	PHONE JACK PHONES				
J6			E11-0188-05	MINIATURE PHONE JACK(2P) S.CON				
⚠ F4			F06-1022-05	FUSE (SEMKO) (250V T1AL)				
-			J11-0098-05	WIRE CLAMPER				
CN6 ,7			J13-0075-05	FUSE CLIP				
L1 ,2			L40-2201-17	SMALL FIXED INDUCTOR(22UH,K)				
X1			L78-0290-05	RESONATOR (8MHZ)				
F	2B		N89-3008-45	BINDING HEAD TAPTITE SCREW				

L:Scandinavia K:USA P:Canada R:MEXICO
Y:PX(Far East, Hawaii) T:England E:Europe G:GERMANY
Y:AAFES(Europe) X:Australia M:Other Areas

⚠ indicates safety critical components.

＊ New Parts
Parts without Parts No. are not supplied.
Les articles non mentionnes dans le Parts No. ne sont pas fournis.
Teile ohne Parts No. werden nicht geliefert.

❹

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格			Destination 仕向	Remarks 備考
J	1C		N35-3006-46	BINDING HD MACHINE SCREW M3X6				
R23 ,24			RN14BK2C9102FTS	RN	91.0K	F 1/6W		
R25 ,26			RN14BK2C6801FTS	RN	6.80K	F 1/6W		
R99 ,100			RN14BK2C1003FTS	RN	100K	F 1/6W		
R125,126			RD14AB2E121JTS	FL-PROOF RD	120	J 1/4W		
R127,128			RD14AB2E822JTS	FL-PROOF RD	8.2K	J 1/4W		
R129-132			RD14AB2E221JTS	FL-PROOF RD	220	J 1/4W		
R139-142			RD14AB2E331JTS	FL-PROOF RD	330	J 1/4W		
R143,144			RD14AB2E151JTS	FL-PROOF RD	150	J 1/4W		
R145-148			RD14AB2E4R7JTS	FL-PROOF RD	4.7	J 1/4W		
R149-152			R92-0205-05	METAL-PLATE	0.1	K 2W		
R153-156			RD14AB2E101JTS	FL-PROOF RD	100	J 1/4W		
R157-164			RD14AB2E102JTS	FL-PROOF RD	1.0K	J 1/4W		
R173,174			RS14DB3D151JTE	FL-PROOF RS	150	J 2W		
R175,176			RS14DB3D100JTE	FL-PROOF RS	10	J 2W		
R195,196			RN14BK2E3301FTS	RN	3.30K	F 1/4W		
⚠ R201,202			RS14DB3D101JTE	FL-PROOF RS	100	J 2W		
⚠ R211-214			RN14BK2E1000FTS	RN	100.0	F 1/4W		
R215,216			RN14BK2E1001FTS	RN	1.00K	F 1/4W		
R219,220			RD14AB2E332JTS	FL-PROOF RD	3.3K	J 1/4W		
R228			RS14DB3D102JTE	FL-PROOF RS	1.0K	J 2W		
R233			RS14DB3A470JTE	FL-PROOF RS	47	J 1W		
R235			RN14BK2E2200FTS	RN	220.0	F 1/4W		
⚠ R253			RD14AB2E680JTS	FL-PROOF RD	68	J 1/4W		
R281,282			RN14BK2E3301FTS	RN	3.30K	F 1/4W		
⚠ R285			RD14AB2E180JTS	FL-PROOF RD	18	J 1/4W		
R289,290			RD14AB2E100JTS	FL-PROOF RD	10	J 1/4W		
⚠ R291		＊	RN14BK2E3600FTS	RN	360.0	F 1/4W		
⚠ R292			RN14BK2E4700FTS	RN	470.0	F 1/4W		
R295		＊	RN14BK2E20R0FTS	RN	20.0	F 1/4W		
VR1		＊	R29-5089-05	POTENTIO M. 100K X2				
VR3 ,4			R12-1618-05	TRIMMING POT.(3.3K) IDLE ADJ.				
VR5 ,6			R12-0607-05	TRIMMING POT.(470) IDLE ADJ.				
K1 -6			S76-0027-05	MAGNETIC RELAY INPUT SELECTOR				
K7			S51-2092-05	MAGNETIC RELAY				
⚠ K8			S76-0015-05	MAGNETIC RELAY				
S1		＊	S68-0033-05	PUSH SWITCH MM/MC				
S2			S42-2139-05	MULTIPLE PUSH SWITCH SPEAKERS				
D1 -16			HSS104A	DIODE				
D1 -16			1SS131	DIODE				
D21 ,22			HZS15S(B)	ZENER DIODE				
D21 ,22			RD15JS(B)	ZENER DIODE				
D23 ,24			HZS8.2S(B2)	ZENER DIODE				
D23 ,24			RD8.2JS(B2)	ZENER DIODE				
⚠ D25 -28			S5688B	DIODE				
⚠ D25 -28			1SR139-100	DIODE				
⚠ D29 ,30			HSS104A	DIODE				
⚠ D29 ,30			1SS131	DIODE				
⚠ D31			D5SBA20F03	DIODE				
⚠ D31			RBV-602LFA	DIODE				
D41 -51			HSS104A	DIODE				
D41 -51			1SS131	DIODE				
D52			HZS5.1S(B2)	ZENER DIODE				

L:Scandinavia K:USA P:Canada R:MEXICO
Y:PX(Far East, Hawaii) T:England E:Europe G:GERMANY
Y:AAFES(Europe) X:Australia M:Other Areas

⚠ indicates safety critical components.

KA-4060R PARTS LIST

PARTS LIST

* New Parts
Parts without Parts No. are not supplied.
Les articles non mentionnes dans le Parts No. ne sont pas fournis.
Teile ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名/規格	Destination 仕向	Remarks 備考
			CONTROL UNIT(X11-351X-XX)			
D1			B30-1291-05	LED STAND BY		
D11 -19			B30-1291-05	LED INPUT SELECTOR		
C1 ,2			CE04KW1HR33M	ELECTRO 0.33UF 50WV		
C3 -8			CF92FV1H101K	MF 100PF K		
C13 -16			CE04KW1HR33M	ELECTRO 0.33UF 50WV		
C17 -20		*	CE04KW1V100M	ELECTRO 10UF 35WV		
		*	CQ92FM1H2235JEL	MYLAR 0.022UF J		
C21 ,22			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C23 ,24			CF92FV1H561J	MF 560PF J		
C31 ,32		*	CQ92FM1H104JEL	MYLAR 0.1UF J		
C33 -35		*	CQ92FM1H103JEL	MYLAR 0.010UF J		
C36 ,37		*	CQ92FM1H102JEL	MYLAR 1000PF J		
C51 ,52			CE04KW1HR33M	ELECTRO 0.33UF 50WV	EGLM	
C53			CE04KW1A470M	ELECTRO 47UF 10WV	Y T	
C61 ,62			C91-1488-05	MF 6800PF 250VAC		
J1			E03-0147-05	AC OUTLET	EGLM	
J2			E03-0306-05	AC OUTLET	Y T	
J3 ,4		*	E03-0109-05	AC OUTLET		
F1			F06-2021-05	FUSE (SEMKΦ) (250V T2AL)	YM	
F2			F06-2021-05	FUSE (SEMKΦ) (250V T2AL)	EGL	
F3			F05-2525-05	FUSE (SEMKΦ) (250V T2.5AL)		
CN1 ,2			J13-0075-05	FUSE CLIP	YM	
CN3 ,4			J13-0075-05	FUSE CLIP	EGL	
CN5 ,6			J13-0075-05	FUSE CLIP		
R45 ,46			RN14BK2E4700FTS	RN 470.0 F 1/4W		
R81			RD14CB2B820JTS	FU-PROOF RD 82 1/4W		
VR1			R06-5191-05	POTENTIOMETER(200KB+B) BALANCE		
VR2 ,3			R06-3061-05	POTENTIOMETER(10KB) BASS/TREBLE		
K1			S76-0009-05	MAGNETIC RELAY		
S1			S40-1064-05	PUSH SWITCH POWER		
S6			S60-0011-05	ROTARY SWITCH REC OUT		
S7 -9			S40-1064-05	PUSH SWITCH MUTE/LOUD/S.DIR		
S15			S31-2322-05	SLIDE SWITCH AC VOLTAGE SEL	YM	
S5			T99-0526-05	ROTARY ENCODER INPUT SELECTOR		
D30			HSS104	DIODE		
D30			1SS133	DIODE		
IC1			NJM4565D-D	IC(OP AMP X2)		
Q1			2SA954(L,K)	TRANSISTOR		
Q2			2SC2003(L,K)	TRANSISTOR		
A1			W02-1153-05	ELECTRIC CIRCUIT MODULE		

L:Scandinavia K:USA P:Canada R:MEXICO
Y:PX(Far East, Hawaii) T:England E:Europe G:GERMANY
Y:AAFES(Europe) X:Australia M:Other Areas

⚠ indicates safety critical components.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名/規格	Destination 仕向	Remarks 備考
D52			RD5.1JS(B2)	ZENER DIODE		
D53 -65			HSS104A	DIODE		
D53 -65			1SS131	DIODE		
D67 ,68			HSS104A	DIODE		
D67 ,68			1SS131	DIODE		
D69			HZ7.5S(B2)	ZENER DIODE		
D69			RD7.5JS(B2)	ZENER DIODE		
D71 ,72			HSS104A	DIODE		
D71 ,72			1SS131	DIODE		
D74 -79			HSS104A	DIODE		
D74 -79			1SS131	DIODE		
IC1			NJM4565D	IC(OP AMP X2)		
IC2			TC9162S	IC(MOTOR CONTROL)		
IC3			TC9164N	IC(ANALOG SWITCH ARRAY)		
IC4			TC9164N	IC(16CH BILATERAL SELECTOR SW)		
IC5		*	M37470M4-189SP	MI-COM IC		
IC6			PST529D	IC(SYSTEM RESET)		
Q1 -4			2SK371(BL)	FET		
Q1 -4			2SK371(V)	FET		
Q5 ,6			2SD1302(S,T)	TRANSISTOR		
Q9			DTC143TS	DIGITAL TRANSISTOR		
Q9			UN4216	TRANSISTOR		
Q10			DTA143TS	DIGITAL TRANSISTOR		
Q10 -18			UN4116	TRANSISTOR		
Q11			2SC1845(F,E)	TRANSISTOR		
Q19 -22			2SA1124(R,S)	TRANSISTOR		
Q23 ,24			2SC2632(R,S)	TRANSISTOR		
Q25 ,26			2SA992(F,E)	TRANSISTOR		
Q27 ,28			2SC1845(F,E)	TRANSISTOR		
Q31 ,32			DTC143TS	DIGITAL TRANSISTOR		
Q31 ,32			UN4216	TRANSISTOR		
Q33 ,34			DTA143TS	DIGITAL TRANSISTOR		
Q33 ,34			UN4116	TRANSISTOR		
Q35 ,36			2SC2458(Y,GR)	TRANSISTOR		
Q35 ,36			2SC3311A(Q,R)	TRANSISTOR		
Q37 -39			2SA1048(Y,GR)	TRANSISTOR		
Q37 -39			2SA1309A(Q,R)	TRANSISTOR		
Q40			2SC3940A(R,S)	TRANSISTOR		
Q40			2SD863(E,F)	TRANSISTOR		
Q41			2SD2012	TRANSISTOR		
Q41			2SD2061(B,F)	TRANSISTOR		
Q42			2SB1370(B,F)	TRANSISTOR		
Q42			2SB1375	TRANSISTOR		
Q43			2SC2003(L,K)	TRANSISTOR		
Q44			2SA954(L,K)	TRANSISTOR		
Q45			2SA1534A(R,S)	TRANSISTOR		
Q45			2SB764(E,F)	TRANSISTOR		
Q46			2SC3940A(R,S)	TRANSISTOR		
Q46			2SD863(E,F)	TRANSISTOR		
Q47 -50			2SC2878(B)	TRANSISTOR		
Q51 ,52			2SC1845(F,E)	TRANSISTOR		
Q53			2SA992(F,E)	TRANSISTOR		
Q55 -56			2SC2003(L,K)	TRANSISTOR		
Q58 -63			DTC143TS	DIGITAL TRANSISTOR		
Q58 -63			UN4216	TRANSISTOR		

L:Scandinavia K:USA P:Canada R:MEXICO
Y:PX(Far East, Hawaii) T:England E:Europe G:GERMANY
Y:AAFES(Europe) X:Australia M:Other Areas

⚠ indicates safety critical components.

KA-4060R

SPECIFICATIONS

FOR U. K. and Europe

Continuous rated power output
(DIN) 1kHz, at 8Ω ..... 70W+70W
at 4Ω ..... 90W+90W
(IEC/NF) From 63Hz to 12,500Hz, 0.7% T.H.D.
at 8Ω ..... 70W+70W
at 4Ω ..... 90W+90W
Dynamic power ..... 85W(8Ω)
100W(6Ω)
120W(4Ω)
Damping factor ..... 40(50Hz)
Total harmonic distortion
..... 0.06%(20Hz~20,000Hz, 60W, 8Ω)
0.03%(1kHz, 60W, 8Ω)
Intermodulation distortion ..... 0.03%(60W, 8Ω)
(70Hz : 7kHz = 4:1)
Frequency response(IHF '78)
CD/TUNER/AUX/TAPE 1, 2
..... 5Hz~90kHz, +0dB, -3dB
PHONO 'RIAA' response ..... 20Hz~20kHz,
+0.3dB, -0.3dB

Maximum input level
PHONO(MM) ..... 120mV, 0.3% T.H.D. at 1kHz
PHONO(MC) ..... 10mV, 0.3% T.H.D. at 1kHz
Signal to noise ratio
PHONO(MM) ..... 88dB(IHF '66)
79dB(IHF '78)
PHONO(MC) ..... 68dB(IHF '66)
75dB(IHF '78)
CD/TUNER/AUX/TAPE1, 2 ..... 105dB(IHF '66)
81dB(IHF '78)
PHONO(MM) ..... 63dB(DIN, 50mW output)
CD/TUNER/AUX/TAPE1,2
..... 63dB(DIN, 50mW output)

Input sensitivity/impedance
PHONO(MM) 2.5mV/47kΩ
PHONO(MC) 0.2mV/100Ω
CD/TUNER/AUX/TAPE1,2 ..... 200mV/47kΩ
Tone control
BASS ..... ±10dB(at 100Hz)
TREBLE ..... ±10dB(at 10kHz)
Loudness control
(VOLUME at -30 dB level) ..... +6dB

Output level/impedance
TAPE REC .....

General
Power consumption .....
AC outlets
For U. K.
SWITCHED ..... 2;(T
For Europe
SWITCHED ..... 3;(T
Dimensions ..... W : 4
H : 1
D : 3

Weight(net) .....

Note : KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be change without

KA-4060R

SPECIFICATIONS

FOR OTHER COUNTRIES

Contiuous rated power output

(IHF '66) From 20Hz to 20,000Hz 0.06% T.H.D.

at 8Ω ..... 60W+60W

(IEC/NF) From 63Hz to 12,500Hz, 0.7% T.H.D.

at 8Ω ..... 70W+70W

at 4Ω ..... 90W+90W

Dynamic power ..... 85W(8Ω)

100W(6Ω)

120W(4Ω)

...or ..... 40(50Hz)

...distortion

..... 0.06%(20Hz~20,000Hz, 60W, 8Ω)

0.03%(1kHz, 60W, 8Ω)

...l distortion ..... 0.03%(60W, 8Ω)

...: 4:1)

...nse(IHF '78)

...X/TAPE1,2

..... 5Hz~90kHz, +0dB, -3dB

...sponse ..... 20Hz~20kHz,

+0.3dB, -0.3dB

...evel

.....120mV, 0.3% T.H.D. at 1kHz

..... 10mV, 0.3% T.H.D. at 1kHz

...o

.....88dB(IHF '66)

79dB(IHF '78)

.....68dB(IHF '66)

75dB(IHF '78)

...TAPE1,2 .....105dB(IHF '66)

81dB(IHF '78)

Input sensitivity/impedance

PHONO(MM) 2.5mV/47kΩ

PHONO(MC) 0.2mV/100Ω

CD/TUNER/AUX/TAPE1,2 ..... 200mV/47kΩ

Tone control

BASS ..... ±10dB(at 100Hz)

TREBLE ..... ±10dB(at 10kHz)

Loudness control

(VOLUME at -30dB level) ..... +6dB(100Hz)

+3dB(10kHz)

Output level/impedance

TAPE REC 200mV/1.5kΩ

General

Power consumption 200W

AC outlet

For Australia

SWITCHED ..... 1;(200W max.)

For other countries

SWITCHED ..... 3;(Total 200W max.)

Dimensions ..... W : 440mm (17-5/16")

H : 137mm (5-3/8")

D : 351mm(13-13/16")

Weight(net) ..... 7.9kg(17.4lb)

* New Parts
Parts without Parts No. are not supplied.
Les articles non mentionnes dans le Parts No. ne sont pas fournis.
Teile ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
Q64 -69			DTA143TS			

...ws a policy of continuous advancements in development. For this reason specifications may be change without notice.

* New Parts
Parts without Parts No. are not supplied.
Les articles non mentionnes dans le Parts No. ne sont pas fournis.
Teile ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
D52 -65			RD5.1JS(B2)	ZENER DIODE		
D53 -65			HSS104A	DIODE		
D67 ,68			1SS131	DIODE		
D67 ,68			HSS104A	DIODE		
			1SS131	DIODE		
			HZS7.5S(B2)	ZENER		
			RD7.5JS(B2)			
			HSS104A			
			1SS131			
			HS...			

...nodification to insure best
...ions. This manual is based on,
...ides information on regional circuit
..., alternate schematic diagrams, and
...mponent variations through use of parts

KENWOOD CORPORATION
14-6, Dogenzaka 1-chome, Shibuya-ku, Tokyo, 150 Japan

KENWOOD SERVICE CORPORATION
P.O. BOX 22745, 2201 East Dominguez St., Long Beach, CA 90801-5745, U.S.A.

KENWOOD ELECTRONICS CANADA INC.
6070 Kestrel Road, Mississauga, Ontario, Canada L5T 1S8

KENWOOD ELECTRONICS LATIN AMERICA S.A.
P.O. BOX 55-2791, Piso 6 Plaza Chase, Cl. 47 y Aquilino de la Guardia Panama, Republic de Panama

TRIO-KENWOOD U.K. LIMITED
KENWOOD House, Dwight Road, Watford, Herts., WD1 8EB., United Kingdom

KENWOOD ELECTRONICS BENELUX N.V.
Mechelsesteenweg 418, B-1930 Zaventem, Belgium

KENWOOD ELECTRONICS DEUTSCHLAND GMBH
Rembrücker Str. 15, 63150 Heusenstamm, Germany

TRIO-KENWOOD FRANCE S.A.
13 Boulevard Ney, 75018 Paris, France

KENWOOD ELECTRONICS ITALIA S.p.A.
Via G. Sirtori, 7/9 20129, Milano, Italy

KENWOOD ESPANA S.A.
Bolivia, 239-08020 Barcelona, Spain

KENWOOD ELECTRONICS AUSTRALIA PTY. LTD. (A.C.N. 001 499 074)
P.O Box 504, 8 Figtree Drive, Australia Centre, Homebush, N.S.W. 2140, Australia

KENWOOD & LEE ELECTRONICS, LTD.
Unit 3712-3724, Level 37, Tower 1, Metroplaza, 223 Hing Fong Road, Kwai Fong N.T., Hong Kong

KENWOOD ELECTRONICS SINGAPORE PTE LTD.
No. 1 Genting Lane # 07-00, KENWOOD Building, Singapore, 1334